ENVIRON

January 10, 2013

Ms. Kristine Matzko
Remedial Project Manager (3HS21)
U.S. EPA Region III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Re: Metal Bank Cottman Avenue NPL Site
Monthly Report due December 10, 2012
Reporting Period: December 1 through December 31, 2012

Dear Ms. Matzko:

As provided in Paragraph 31 of the Utility Consent Decree, and on behalf of the Cottman Avenue PRP Group, Environ Corporation as the Supervising Contractor is submitting to USEPA three copies of a written monthly progress report. Copies of the monthly progress reports are attached to this letter.

Please contact me (617.946.6115) if you need additional information regarding this submission.

Very truly yours,

ENVIRON International Corporation

Joseph P. Vitale

Joseph P. Vitale, PE
Project Director

cc: Cottman Avenue PRP Group
Steering and Technical Committees
Dan J. Jordanger, Esquire

Enclosures
3329202

Project Name: Metal Bank NPL Site	For the Month: December 2012	
Project Location: Philadelphia, PA	Report Number: 81	Dated: January 10, 2013

Name: Joseph P. Vitale (ENVIRON)	Title: Project Director
Telephone No.: (617) 946-6115	Telefax No.: (617) 946-3229

Reporting Period: December 1 through December 31, 2012

(a) Describe the actions, including submittal of work plans and other deliverables, which have been taken toward achieving compliance with the Consent Decree during the previous month:

Actions or Deliverables	Dates Performed or Submitted
Fish Data Analysis Memorandum	1/10/2013
Validated Fish Data	1/10/2013
Retrieve warning buoys	1/2/2013

(b) List summaries of inspections, sampling, testing, and other data received or generated in the previous month, and when possible, attach the documentation to this report:

Submittals	Dates Performed	Attached/Separate Cover
Fish Data Analysis Memorandum	1/10/2013	Attached to this report
Validated Fish Data	1/10/2013	Electronically transferred on 1/10/2013 due to size of file

(c) Describe all actions, including, but not limited to, data collection and implementation of work plans, which are scheduled for the next month and provide other information relating to the progress of work:

The current 2-month look-ahead schedule for LTM and O&M is as follows:

LTM Activities	Start Date	Anticipated Completion Date
Benthic Community Survey Report	12/7/2012	1/31/2013
October 2012 Validated Groundwater sampling Results	Week of 11/1/2012	Week of 1/28/2013
Sheet Pile Wall Inspection Report	12/14/2012	1/31/2013

(d) Include information that may affect the future schedule for implementation of the Work, and a description of efforts made to mitigate those delays or anticipated delays:

- As stated in the previous monthly report, we are delaying herbicide application until spring of 2013 following the schedule presented in the Invasive Species Control Plan.

(e) Include any modifications to the work plans or other schedules that the Utility PRP Group has proposed to EPA or that have been approved by EPA:

- None

(f) **Describe all activities undertaken in support of the Community Relations Plan during the previous month and those to be undertaken in the next month:**

- None

January 10, 2013

MEMORANDUM

To: Joseph P Vitale, PE, LSP

From: Michael J Bock, PhD

Subject: Analysis of Metal Bank 2012 Fish Monitoring Data

We have completed a preliminary analysis of the recently acquired fish monitoring data. Fish samples were collected by Normandeau Associates from upriver (2 samples), proximate to the site (5 samples), and down river (2 samples) on July 10, 11, and 12. Thus there were in total 4 offsite reference samples and five near-site samples and one performance evaluation standard. For each sample the fish were composited and homogenized prior to extraction and analysis for PCBs as Aroclors and lipids. The data package was validated by Environmental Standards and the data was determined to be usable. For each sample, we have summed the detected PCB Aroclors to calculate the total PCB concentration. The result were reported in ug/kg but can be converted to ppm by dividing the total PCB value by 1000.

Table 1. Fish Tissue Results

Sample Number	Area	Sample Date	Method	Analyte	Result	Laboratory Qualifier	Detection Limit	Units
ST1-TP-BK	Ref	7/12/2012	8082A	Total PCB	880	AP	100	UG/KG
ST1-TP-ESM	Ref	7/12/2012	8082A	Total PCB	820	AP	100	UG/KG
ST2-MB-BK	Site	7/10/2012	8082A	Total PCB	164	AP	30	UG/KG
ST2-MB-ESM	Site	7/10/2012	8082A	Total PCB	400	AP	50	UG/KG
ST3-MB-BK	Site	7/10/2012	8082A	Total PCB	244	AP	50	UG/KG
ST3-MB-MC	Site	7/10/2012	8082A	Total PCB	136	AP	30	UG/KG
ST4-MB-BK	Site	7/10/2012	8082A	Total PCB	279	AP	40	UG/KG
ST5-PC-BK	Ref	7/11/2012	8082A	Total PCB	164	AP	10	UG/KG
ST5-PC-MC	Ref	7/11/2012	8082A	Total PCB	90	AP	10	UG/KG

The results show that the total PCBs are less than 1 ppm for both the reference area samples and the site samples. We conducted a series of statistical tests to compare these results to the 2011 fish tissue sample results and to compare the reference samples to the near-site samples. For the 2011 results we used the sum of the detected congeners. These congener results were previously found to be consistent with the Arcolor results performed by this laboratory on the 2011 fish samples.

Prior to statistical testing, the data was evaluated for normality and adherence to the assumptions associated with parametric testing. Summary statistics are presented in Table 2 and include the arithmetic mean and median. By definition 50% of the observations are lower than the medina and 50% are greater than the median. Based on these evaluations the data was analyzed using t-tests. Figure 1 presents box plots (Tukey 1977) that compare the 2011 to the 2012 data. The results show considerable overlap between the two data sets and also show considerable overlap between the site and reference areas. The dark green horizontal line

present the 1 ppm threshold that triggers additional analysis, as described in the project specific QAPP.

Table 2. Summary Statistics in ppm

Year	Area	n	Mean	Median
2011	Ref	5	0.145	0.133
2011	Site	3	0.143	0.098
2012	Ref	4	0.489	0.492
2012	Site	5	0.245	0.244
All	Ref	9	0.298	0.149
All	Site	8	0.206	0.202

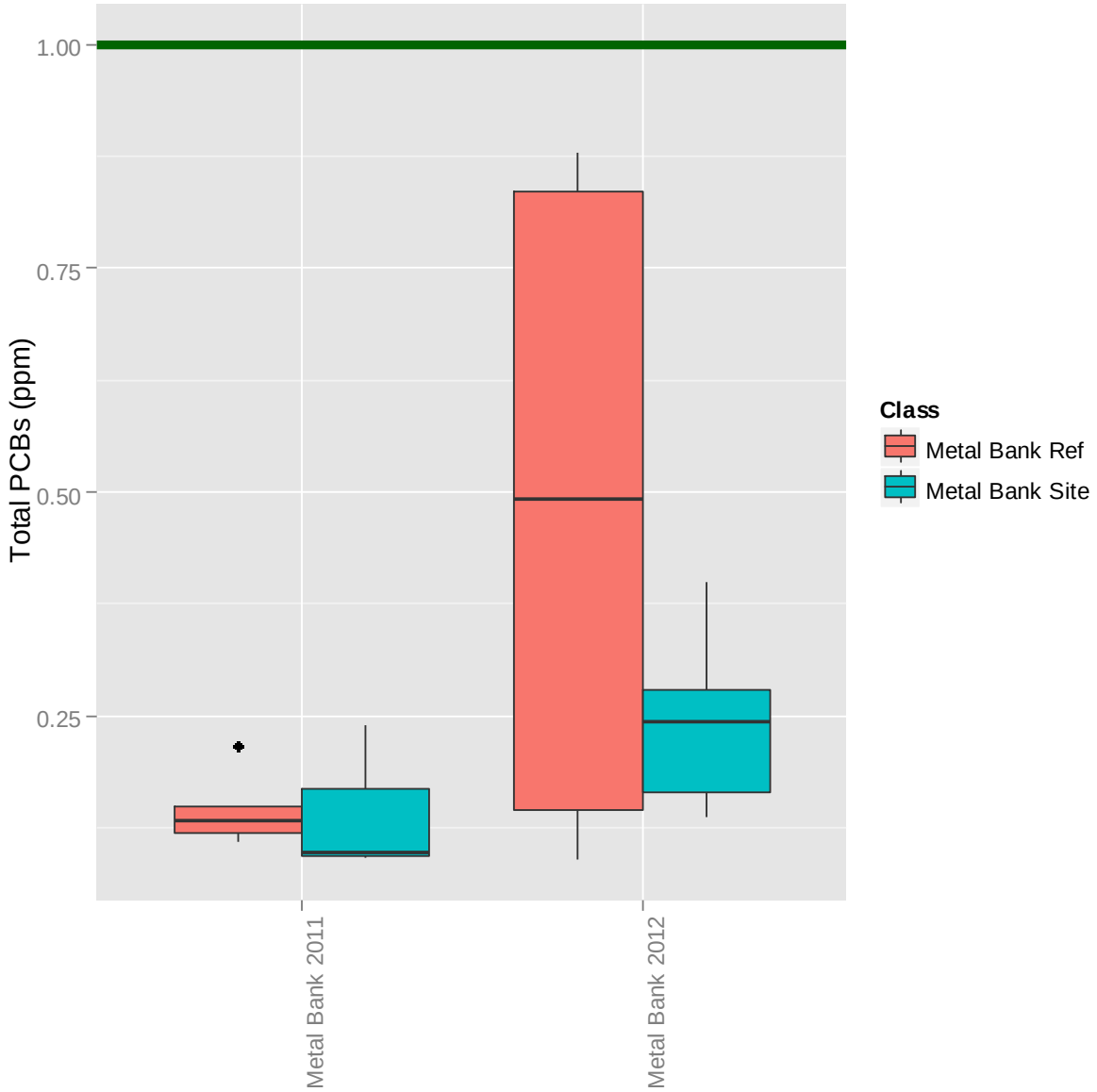

Figure 1. Box Plots of Fish Tissue Monitoring Results

The t-tests revealed no statistically significant differences between 2011 and 2012, nor did they reveal any statistically significant difference between site and reference area (all p-values > 0.10). Based on this analysis, there is no significant increase in the on-site samples as compared to the reference area samples; in fact the mean Total PCB concentration from the reference area exceeded the onsite mean for 2011, 2012, and for the combined dataset. In addition, the sample results are all well below the 1 ppm threshold that triggers additional analyses. These results were also compared to tissue based total PCB toxicity reference values for fish. Hansen et al (1974) reported a No-Effect Concentration (NOEC) of 1.9 ppm and a Lowest Effect Concentration (LOEC) of 9.3 ppm. Both the NOEC and LOEC are well above the highest observed tissue concentration.

We have also compared these results to previous results for the Delaware River and the Great Lakes. All of the fish samples using in this comparison were whole body and were reported on a wet weight basis. Data was obtained from the DRBC 2000 fish samples (DRBC 2000), the 2001 and 2002 DRBC fish samples (Ashley et al. 2004), and the Great Lakes National Program Office [GLNPO] (USEPA 2003). The Ashley data was divided into two classes, large and small fish, with small fish denoted as (SF) in the following figure. The data associated with each data set are presenting using standard box plots (Tukey 1977). Figure 2 presents to total PCB values with the green line denoting the NOEC (1.9 ppm), the yellow line denoting the LOEC (9.36 ppm), and the grey line denotes the FDA action level (2 ppm).

The results show considerable overlap between the Metal Bank data and previous observations from the Delaware River and the Great Lakes. In fact the results from the Metal Bank site are among the lowest in this data compilation.

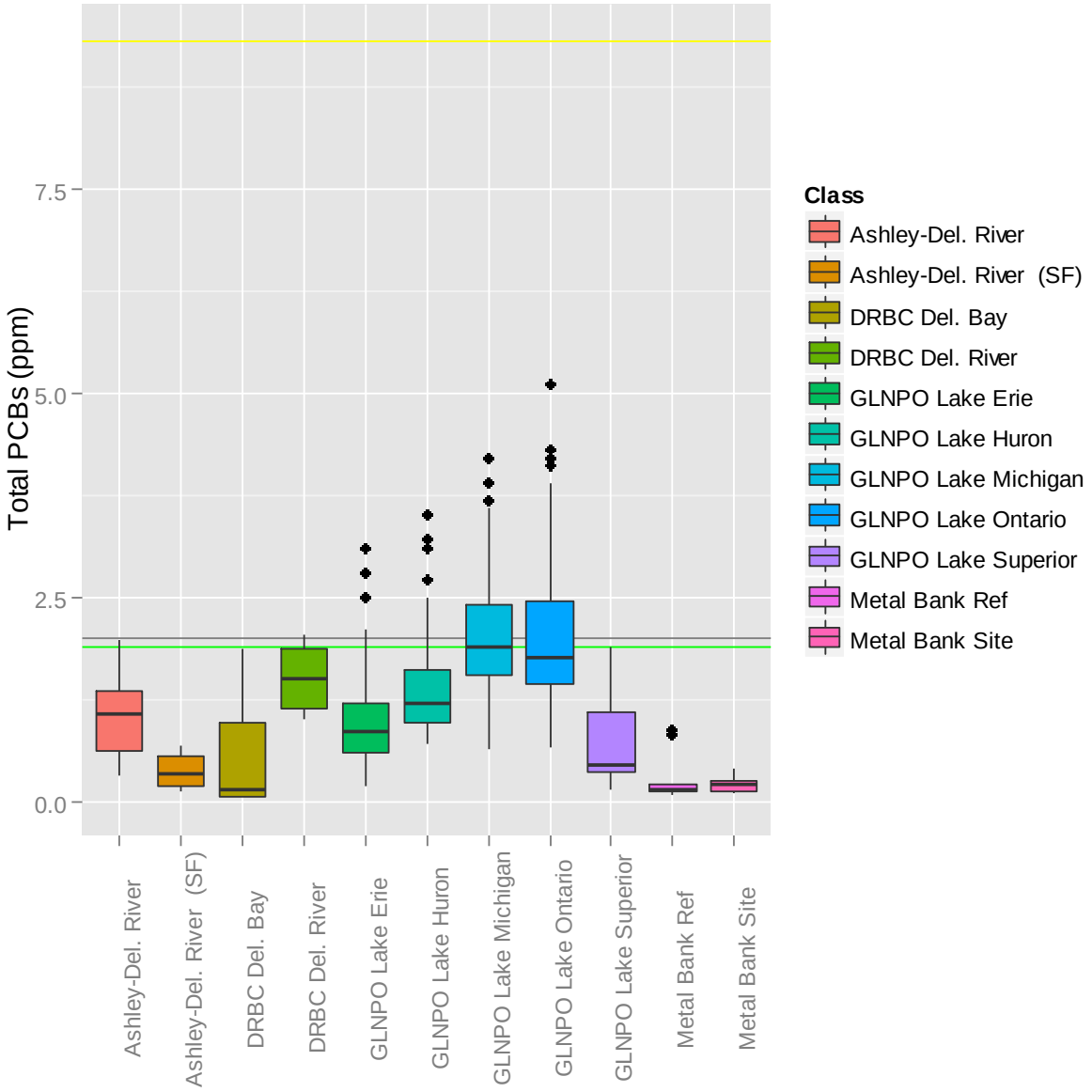

Figure 2. Comparison to Regional PCB Values

Summary

The fish monitoring results show comparatively low total PCBs values, well below the NOEC of 1.9 for all of the samples. When the results are compared to previous results from the Delaware River and the Great Lakes, the Metal Bank and vicinity values are among the lowest observed. The results show that the fish tissue results are lower than those observed in the majority of other data sets from the Delaware River and the Great Lakes, and are consistent with the local background. There is no evidence that suggests that the fish tissue concentrations in the vicinity of the Metal Bank site are significantly elevated above regional values. In addition, the concentrations are well below the 1 ppm threshold that triggers additional analysis.

Sincerely,

Michael J. Bock, PhD
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REFERENCES

Ashley, J.D. Velinsky, M. Wilhelm, J. Baker, D. Secor, and M. Toaspem. 2004. Bioaccumulation of polychlorinated biphenyls in the Delaware River Estuary. Report No 03-03F submitted to Delaware River Basin Commission, January 15,2004.

Delaware River Basin Commission (DRBC). DRBC/EPA Coastal 2000 Fish and Blue Crab Results. http://www.state.nj.us/drbc/fishtiss.htm (accessed 12/8/2011).

Hansen, D.J., S.C. Schimmel, J. Forester. 1974. Aroclor 1254 in eggs of sheepshead minnows: Effect on fertilization success and survival of embryos and fry. Proceedings of Southeastern Game and Fish Commission, pp. 420-426.

Tukey, J. W. (1977) Exploratory Data Analysis. Section 2C.

U.S. Environmental Protection Agency (USEPA). 2003. Great Lakes National Program Office (GLNPO). Great Lake Fish Monitoring Program (Top Predator):1977-2003. http://www.epa.gov/glnpo/glindicators/fishtoxics/topfishb.html (accessed 12/12/2011).